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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/767,172	01/30/2004	Bumman Kim	1751-349	4689

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EXAMINER

NGUYEN, THUAN T

ART UNIT

PAPER NUMBER

2618

DATE MAILED: 05/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/767,172	Applicant(s) KIM ET AL.	
	Examiner THUAN T. NGUYEN	Art Unit 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 9 is/are rejected.
- 7) ☐ Claim(s) 3-8 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wright et al (U.S. Patent 5,990,734) in view of Brandt (US Patent No. 6,538,515 B2).

Regarding claim 1, Wright teaches a linear amplification with nonlinear components (LINC) power transmitter comprising a digital signal processing unit, a frequency modulation unit which converts a digital output from the digital signal processing unit to a RF signal; and a signal amplification unit which amplifies the RF signal output from the frequency modulation unit using a gain amplifier and a power amplification module (Wright, Fig. 2, DCSP 21 for DSP, D/A conversion 22 for converting to RF signals, k 15 and k 16 for signal amplification; with a gain amplifier and a power amplification module 25).

Wright does not further address a DC/DC conversion unit which controls bias of the power amplification module; however, such a technique in using DC bias in controlling the power level in the analog domain is known in the art. In fact, Brandt teaches to use DC Bias in serving the same purpose as the receiver has multiple output power modes (Fig. 4, and col. 2/line 63 to col. 3/line 8; col. 3/line 55 to col. 4/line 19). Therefore, it would have been obvious to one of ordinary skill in the art to modify Wright's system with Brandt's teaching technique as noted

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in order to control the bias power level of the power amplification within the analog domain as taught by Brandt.

As for claim 2, Wright teaches these features of a signal component separator, a local oscillator and a bias/level controller (Fig. 2, item 11 for signal component separator SCS; and Fig. 26 and col. 39/lines 49-67 for LO and bias/level controller).

As for claim 9, Wright further teaches to use the software for changing communication modes (Fig. 30 and 31 for adaptive algorithm and col. 40/line 42 to col. 41/line 8; and switching/changing sources as SCS output, refer to col. 41/line 9-39).

Allowable Subject Matter

3. Claims 3-6 and 7-8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record does not teach a LINC as cited in claim 1 AND further including the features of claims 3 and 7 as claimed.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Stasz and Afrashteh et al. (in PTO 892 attached) disclose systems related to LINC power transmitter and technique.

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5. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to the New Central Fax number:

(571) 273-8300, (for Technology Center 2600 only)

Hand deliveries must be made to Customer Service Window,

Randolph Building, 401 Dulany Street, Alexandria, VA 22314.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony Thuan Nguyen whose telephone number is (571) 272-7895.

The examiner can normally be reached on Monday-Friday from 9:30 AM to 7:00 PM, with alternate Fridays off.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**TONY T. NGUYEN
PATENT EXAMINER**

Tony T. Nguyen
Art Unit 2618
May 12, 2006